

## Computing Technology

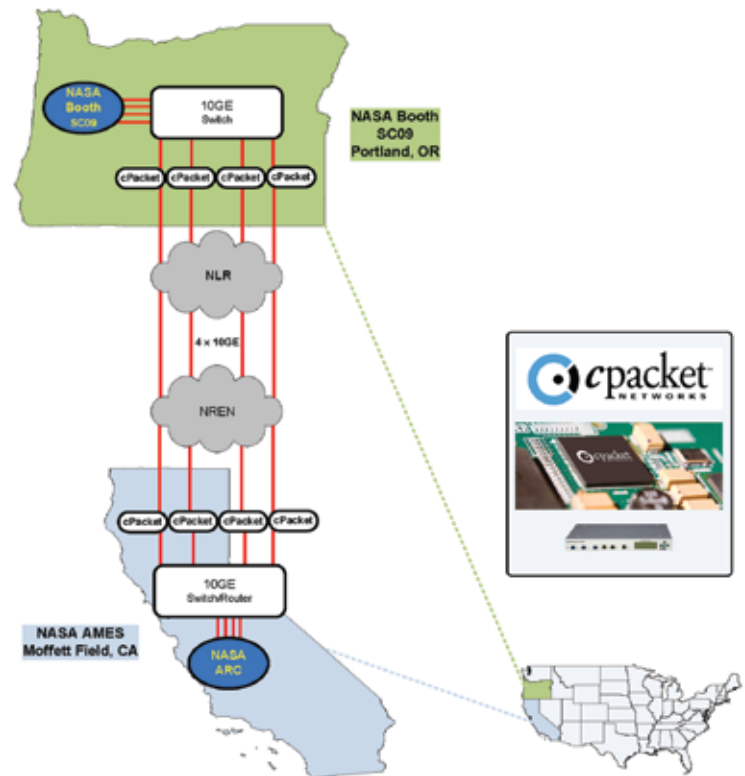
# Hardware-Assisted Intelligent Network Monitoring and Measurement at 10 Gigabit/s and Beyond

Selectively monitoring network traffic at 10 gigabits per second (gigabit/s) and beyond is now possible through the use of application-specific integrated circuits (ASICs). When bundled into an appliance with a passive optical network tap, these ASICs (developed by cPacket, Inc.) permit high-resolution per-packet network filtering, monitoring, and troubleshooting in real time.

In this demonstration, we will utilize the NASA Research and Engineering Network (NREN) and the National Lambda Rail (NLR) for testing and evaluating this technology over the wide area network—between NASA Ames in Mountain View, Calif. and Portland.

This work supports the High-End Computing Capability project's activities at NASA Ames, which has a greater role of fulfilling the Agency's computing needs. Monitoring and troubleshooting of the network is a critical operational activity, and having fine-grained access to packet flows occurring at 10 gigabits/s allows us to more quickly and thoroughly troubleshoot user problems.

Technology such as cPacket's permits better troubleshooting and monitoring of very high-speed network connections. As the Internet grows to higher speeds, tools like this can be applied to commercial networks, allowing them to also grow to higher capacities, permitting a richer Internet experience, with better video and faster interaction with websites.



Selectively monitoring network traffic at 10 gigabit/s and beyond is now possible through the use of application-specific integrated circuits (ASICs). This diagram depicts utilization of the NASA Research and Engineering Network (NREN) and the National Lambda Rail (NLR) for testing and evaluating this technology over the wide area network—between NASA Ames in Mountain View, Calif. and Portland.